

CLAIM AMENDMENTS

1 1. (currently amended) A method for measuring the
2 polarization mode dispersion of an optical fiber, the method
3 comprising the steps of:

4 applying an optical signal to a first end of the fiber,
5 [[and]]

6 coupling a second end of the fiber to an interferometer ~~7~~
7 ~~said method comprising the step of:~~

8 generating by means of said interferometer at least one
9 interferogram comprising at least a central peak and two side lobes
10 having a determined information content; ~~and being characterized by~~
11 ~~the steps of~~

12 processing said interferogram in such a way as to measure
13 the information content of at least one of said two side lobes;
14 [[and]]

15 determining the polarization mode dispersion of the
16 fiber and associating to said with the measurement of said
17 information content a probability density function representative
18 of the polarization mode dispersion of the fiber in the form of
19 differential group delay by computing the deconvolution of the one
20 side lobe with the central peak so that the deconvolution
21 corresponds to the probability density of the differential group
22 delay determined by the PMD of the fiber; and

23 outputting the determined polarization mode dispersion.

2. (canceled)

1 3. (currently amended) The method as claimed in claim
2 1, further comprising the ~~characterized by the additional~~ step of
3 determining an average of measurements of said
4 information content whereto to which said probability density is to
5 be associated.

1 4. (currently amended) The method as claimed claim 1-
2 ~~characterized in that~~ wherein said information content comprises a
3 single numeric value determined by the position of said at least
4 one side lobe in the interferogram.

1 5. (currently amended) The method as claimed in claim 1
2 ~~characterized in that~~ wherein said information content comprises a
3 plurality of values determined by the position of said at least one
4 side lobe in the interferogram.

1 6. (currently amended) A computer program product able
2 to be directly loaded in the internal memory of an electronic
3 measuring device and comprising portions of software code to
4 implement the method as claimed in claim 1 when the product is run
5 on said electronic device.

1 7. (currently amended) A system for measuring the
2 polarization mode dispersion of an optical fiber, the system
3 comprising:

4 an optical source able to generate an optical signal to
5 be injected into the fiber;

6 an interferometer associated ~~[[to]]~~ with the fiber and
7 able to generate an interferogram comprising at least a central
8 peak and two side lobes having a determined information content;
9 ~~characterized by~~

10 ~~a device~~ control means connected to said interferometer
11 ~~and able to for~~

12 processing said interferogram in such a way as to
13 measure the information content of at least one
14 of said side lobes; ~~[[and]]~~

15 determining ~~determine~~ the polarization mode
16 dispersion of the fiber and ~~associating to said~~
17 with the measurement of said information
18 content a probability density function
19 representative of the polarization mode
20 dispersion of the fiber in the form of
21 differential group delay; and

22 computing the deconvolution of the one side lobe
23 with the central peak so that the deconvolution
24 corresponds to the probability density of the
25 differential group delay determined by the PMD
26 of the fiber.

8. (canceled)

1 9. (currently amended) The system as claimed in claim
2 7, ~~characterized in that said device comprises a second module able~~
3 ~~to determine wherein the control means further serves for~~
4 determining an average of measurements of said
5 information content whereto to which said probability density is to
6 be associated.

1 10. ~~[[The]]~~ A device for measuring the polarization mode
2 dispersion of an optical fiber into which optical signals have been
3 injected, the device comprising
4 an optoelectronic module able to convert the optical
5 signals into electrical signals;
6 ~~a display device able to generate means for generating an~~
7 interferogram comprising at least a central peak and two side lobes
8 having a determined information content; ~~characterized by~~
9 ~~[[a]] control unit able to~~ means for
10 measuring measure the information content of at
11 least one of said two side lobes; ~~[[and]]~~
12 determining ~~determine~~ the polarization mode
13 dispersion of the fiber and associating with
14 the ~~to said~~ measurement of said information
15 content a probability density function
16 representative of the polarization mode

17 dispersion of the fiber in the form of
18 differential group delay; and
19 computing the deconvolution of the one side lobe
20 with the central peak so that the deconvolution
21 corresponds to the probability density of the
22 differential group delay determined by the PMD
23 of the fiber.

11. (canceled)

1 12. (currently amended) The device as claimed in claim
2 10, ~~characterized in that it comprises a second program module able~~
3 ~~to determine~~ wherein the control means further serves for
4 determining an average of measurements of said
5 information content ~~whereto~~ to which said probability density is to
6 be associated.

1 13. (new) The method as claimed in claim 1 wherein the
2 determined polarization mode is outputted by displaying it.